CITIZEN ENGAGEMENT INTO THE IMPLEMENTATION OF WELFARE SCHEMES IN TELANGANA DISTRICTS

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ABSTRACT

Citizens are understood as the ultimate client of government, development institutions and private sector interventions in a country. Citizens can act as individuals or organize themselves in associations and groups such as community based groups, women's groups, or indigenous peoples' groups. Civil society organizations (CSOs) can represent citizens and can include organizations outside the public or for-profit sector, such as nongovernmental organizations (NGOs), charitable organizations, faith-based organizations, foundations, academia, associations, policy development and research institutes, trade unions, and social movements. In this context, the term citizen is not used in a legal sense but is understood in the broad sense of referring to all people in a society or country in an inclusive and nondiscriminatory way. We leverage the deep penetration of mobile phones in Telangana to design a suite of IVR (Interactive Voice Response) tools that can help capture community perceptions, improve awareness of the people, and verify official records directly by the beneficiaries themselves. In the context of a rural employment guarantee scheme, we evaluate these tools in a few villages in the state of Telangana and demonstrate that there is good scope for using IVR tools to serve as a citizen engagement channel for welfare schemes. Our contribution lies in outlining several use-cases for technology interventions, and uncovering nuances that should be addressed if such systems are integrated into the implementation.

KEYWORDS: Information technology, use-cases, IVR Data base Technology.

1. INTRODUCTION

The state governments in Telangana run various welfare schemes like the civil society organizations (CSOs) and the non-governmental organizations (NGOs). However, the governments do not have any direct mechanism to understand public perception on these schemes, the level of awareness about these schemes and problems that beneficiaries face in the implementation. Studies show very low awareness on (CSOs) among the beneficiaries, and other studies show misuse of funds. Systems like call center hiplines set up by the governments are far underutilized largely owing to a lack of awareness about these grievance channels and poor expectation by the people of seeing any resolutions come through, as a result of which these channels do not capture implementation insights well. For example, only 17 calls per day are made to the government call centre in the state of Telangana regarding (CSOs) Governments have also set up large MIS systems to track minute details about the implementation of various schemes to bring more transparency, but these MIS systems are not directly accessible by the target beneficiaries due to low literacy and their inability to use the Internet, thus impacting ways in which the MIS data can be put to better use. There are provisions for conducting social audits but it is a resource intensive exercise in terms of time, money and human resources. Moreover, independent social audit bodies are missing in Telangana state of India.

Given the deep penetration of mobile phones in Telangana, and the ability of even poorly literate people to use basic calling functions and voice communication, we argue that mobile phones can help citizens engage directly with government to provide feedback targeted at improving the performance of welfare schemes. In this paper, we describe our experience of using automated voice calls via IVR systems to capture community perceptions and feedback, and involve the communities in verifying the reported status of activities done under these government schemes. Our objective is to verify broadly if technology can provide a scalable method for citizen engagement in a rural low-literacy scenario at this stage we do not specially look in detail at how the IVR system should be designed for better usability or best ways for integrating it with the MIS.

2. DEVELOPMENTAL AND WELFARE INITIATIVES

Farmers in the Telangana state have faced severe financial crisis due to frequent crop failures, lack of adequate support price, steep hike in input costs and the indifferent attitude of the erstwhile United Andhra Pradesh state government. Unable to clear the heavy compounding private debts as well as the loans raised from the financial institutions, coupled with the day to day expenditure that the family demanded and driven to a despair situation, some farmers, unfortunately, have resorted to suicides. The Telangana Government, which took the reins, felt that, it is its responsibility to share burden of the farmers. Towards implementing its election promise, the Telangana government has decided to waive up to Rs.1.00 Lakh crop loans taken by the farmers. Agricultural loans on gold mortgage have also been included, much to the relief of the farming community in the state. The initiative taken by the Telangana State government would benefit about 40 Lakh families. Though the burden on the government is to the tune of Rs.18 thousand Crores, keeping in view of the welfare of the farming families, Honorable Chief Minister K Chandrasekhar Rao, who is aware of the difficulties faced by farmers, took the decision to waive the crop loans, there by heralding good times to the entire farming community in the state.

A) Provision of Input Subsidy

Benevolent that K Chandrasekhar Rao known for, he did not stop at waiving the farming loans, his government had also decided to pay the pending dues to the farmers. The government has released input subsidy to the farmers in all the Telangana districts. The earlier governments did not take note of the requests made by the farmers to compensate the losses incurred mainly due to heavy rains resulting in damage to the crops. The earlier governments did not respond at all despite Dharnas, Rasta Rokos organized by the farmers to give vent to their frustrations. The present Telangana government has decided to compensate the losses to the farmers. An amount of Rs.404.58 Crores has been released as input subsidy to the farmers.

B) Allotment of 3 acres of land to Dalits Families

Ever since Independence, there has been lot of propaganda that the successive governments have taken up number of welfare programmes to benefit the Dalits and other depressed classes. In effect there has not been much of a change for the improvement of their lives except for pep talk by the powers that be. Even now in every village the worst downtrodden people belong to Dalits community. There are still many Dalits families who cannot afford a square meal a day. Majority of Dalits and their family members work as agriculture laborers in the un-organized sector. The Telangana government desires to change their status into a full-fledged farming community. This is the precise reason why the Chief Minister decided to provide 3 acres of land to every Dalit family. The Government feels that it is not just enough to give mere land but also to provide facilities like bore well, motor, power supply as well as initial investment for a year. It is not just enough to talk about inequalities and untouchables. This has to be exhibited in true letter and spirit by elevating the agricultural laborers as farmers. The government feels that their economic status needs to be enhanced and also their respect in the society is to be kept up. The Honorable Chief Minister has taken up this responsibility personally on his shoulders. He kept the welfare portfolio with him and changed the name of 'Social Welfare Department' as 'Scheduled Caste Development Department'. On the Independence Day the distribution commenced with CM handing over pattas to Dalit women at the Golconda Fort.

3. BACKGROUND ON CSOs

CSOs enacted to reduce rural poverty and stem rural-urban migration. The Act guarantees a minimum of 100 days of work to every rural household willing to do manual labour. Job Cards are issued to households. The intention is for people to demand work to be done in their village, which is then discussed in a gram sabha, and approved by higher government authorities. Typical works include the construction of roads, toilets, water ponds, or planting of trees. No heavy machinery is allowed, and the work cannot be outsourced to contractors. An unemployment allowance is paid if a household is not provided the minimum number of guaranteed work-days. There is also provision for basic work-site facilities like drinking water and toilets. Wages must be paid within 14 days from the date of completion of the assigned work otherwise a delay compensation allowance is paid.

The scheme suffers from several implementation problems. Many people do not have job cards and neither do they know that it is their right to have a job card and demand work. There are also problems of fudged records, ghost assets and sub-standard quality of work. There are cases where works do not exist on the ground but the money has been spent. Other common problems include the hiring of heavy machines to accomplish the work, innate accounts, favoritism in work allotment and wrong, delayed or nonpayment of wages.

Our work outlines ways to bridge these gaps using community driven and crowd-sourced reporting tools that can be used by the target beneficiaries even though many of them are poorly literate. Through structured and unstructured surveys to collect community feedback, the implementing agencies can understand the community's perception about the schemes, their level of awareness, and problems they face in accessing the schemes. Through crowd sourced verification, the authorities can potentially even identify locations where corrupt practices are rife. This will help them to modify, plan and deploy the scheme in a better way and take corrective actions where necessary.

4. IVR DESIGN

Our goal is to design and evaluate an interactive voice response system that performs an automatic "job interview" with low-income job seekers. Potential employers, thereby making it easier for them to connect with qualified applicants, could browse the results of the interview. In this work, we limit our focus to the domain of drivers: individuals seeking full-time employment driving a vehicle for a family or a company. To develop a questionnaire that is both meaningful for employers as well as comprehensible to drivers, we employed an iterative design process. We obtained an initial list of questions by surveying online advertisements by those looking for drivers on Babajob.com (a mobile and Internet jobs portal in India). We refined this list via in-person conversations with several people who have hired drivers in the past, including the transportation manager at a large corporate office. Our resulting prototype questionnaire encompassed numeric questions (e.g., what is your expected salary?), yes/no questions (e.g., are you married?), multiplechoice questions (e.g., what is your level of education?), as well as free-response questions (e.g., how would you navigate to an unknown location?). Numeric, yes/no, and multiplechoice responses were encoded as DTMF key presses, while free responses were recorded in the user's own voice. To evaluate our prototype, we performed three Wizardof-Oz trials with drivers at a corporate office, as well as six automated IVR trials that were administered to registered drivers in an online jobs portal. Based on the experiences of these initial users, we improved the questionnaire in several ways. The most important learnings were as follows:

- **Anticipate that users may be in noisy or distracting environments.** Some of our participants had difficulty hearing the prompts because they received our call in a noisy environment, or were unable to give it their full attention. We responded by offering such users the option of rescheduling the call to a time that would be quieter or less busy. Also, we amended the IVR to advise users that each prompt will be repeated if they do not answer; thus, in the event of distractions or noise, they can wait for the repeat instead of trying to answer a question they do not understand.

- **Illustrate multi-digit entry using multiple examples.** Users had difficulty understanding multidigit entry (e.g., salary field), even when an example was provided by the IVR. Sometimes users did not respond at all, and sometimes they entered the exact digits that were used in the example (even though it did not correspond to their salary). To alleviate this problem, we provided multiple examples of multi-digit entry in the instructions.

- **Explain that '0' is a valid answer to certain numeric questions.** For example, on the question "how many times have you received a traffic ticket?", participants did not know what they should enter if they have never received a ticket. We clarified the prompt to instruct them to press zero if they have never received a ticket. (In retrospect, an even better solution could have been to first ask whether or not they had received any tickets, and if so, to ask for the exact number of tickets.) As another example, for a question asking how many passengers are usually in the driver's car, a participant did not know how to answer because he drove commercial goods instead of people. We eventually decided to remove this question.

- **Enable users to skip sensitive questions.** For sensitive questions ("do you smoke?" and "do you drink?"), some users were disconnecting the call instead of answering. Thus, we added an option to skip three questions. Potential employers could obtain this information separately during a follow-up interview.

- **Prevent users from going too fast.** Because some questions included an explicit confirmation ("press 1 to confirm your answer, or press 2 to change"), one participant wrongly assumed that all questions were followed by confirmation. Thus, he pressed "1" after every response, causing him to answer some questions without even listening to them. We responded by prefacing each new question with a prompt that says, "next question", and has barge-in disabled.

Table 1: Data collected in our IVR questionnaire for those seeking employment as drivers. All questions were worded in the local language (Telugu).

I. Personal information	
1. Age	multi-digit*
2. Marital status	yes/no
3. Education	multiple choice*
II. Professional information	
4. Own commercial permit	yes/no
5. Years as a driver	multi-digit*
6. Years with license	multi-digit*
7. Number of hours willing to work (per day)	multi-digit*
8. Open to working night-shifts	multiple choice
9. Open to working part-time or short-term	yes/no
10. Latest salary (Rs / month)	multi-digit*
11. Expected salary (Rs / month)	multi-digit*
12. Own vehicle for commute to work	yes/no
13. Carry mobile phone	yes/no
14. Knowledge test: Is Lenin Sarani one-way	yes/no
15. Knowledge test: Is MG Road one-way	yes/no
16. Knowledge test: Landmark near Esplanade	multiple choice
17. Comfortable working outside Kolkata	yes/no
18. Comfortable wearing uniform to work	yes/no
19. Comfortable driving foreigner	yes/no
20. Willing to do odd jobs in addition to driving	yes/no
21. Number of traffic tickets received	multi-digit*
22. Smoking habits	multiple choice*
23. Drinking habits	multiple choice*
III. Free response	
24. Languages understood, spoken, written, read	free response*
25. How to find an unknown place	free response*

*indicates questions with replay and confirmation of response

- **Define all terms, leaving no room for interpretation.** Because users do not have the opportunity to ask for clarification during the IVR interview, all potentially ambiguous terms need to be explained fully. For example, a participant did not know if "night shift" implied working continuously overnight, or working just a few hours at night. As another example, for a question asking for years of education, a participant did not understand that their 3-year diploma after course 12 counted as "more than 12 years" of education. We clarified all such language to be more explicit.

Incorporating the feedback from initial trials, we arrived at the final design for our IVR system, which is illustrated in Table 1. Our final questionnaire had 25 questions: 7 questions required a multi-digit response, 5 were multiple-choice questions, 11 were yes/no questions, and 2 required open, spoken responses. Three questions (#14-#16) tested drivers' knowledge of local roads, while the others gathered basic personal and professional information. Multiple-choice questions had either three or four choices. To improve data accuracy, the system required confirmation for all of the multi-digit responses, as well as two multiple-choice responses and both of the oral responses. The questionnaire was developed in Bengali, recorded by a native Bengali speaker and administered only to native speakers of Telugu. The IVR system was implemented using a variant of IVR Junction [33], based on Voxeo Prophecy, Classic ASP, and IIS Server. We used a GSM modem (Matrix ATA 211G) with a mobile SIM card for the telephony interface.

Structured Survey of calls data

Having collected a mass of issues through Mobile Vaani, the authorities might like to probe them in depth through some structured and quantitative questions on these issues. For this purpose we used an IVR based survey tool called survey [12] developed by Gram Vaani. Survey presents a set of voice questions over a phone call, which can be answered using either DTMF key presses, or by verbally recording the answers.

We developed the questionnaire for survey with the help of an expert from the parent organization of our partner radio station with inputs from the feedback coming into Mobile Vaani. For example, we formulated a question on machine usage in CSOs after we received the feedback on Mobile Vaani that in certain villages machines were being used instead of the workers being given employment. We asked a mix of yes-no (binary) questions, which could be answered using the DTMF buttons 1 and 2, and verbal answer questions, which could be answered

by recording the response during the call. The complete set of questions is given in Table 1. These questions are not exhaustive but are intended to showcase the utility of the platform to collect structured feedback, which can be used to probe qualitative insights or community perceptions in greater depth.

Call Summary Report

Call Status	Count	Minutes	Average	Transfer	Average
1 (Web Info)	14	15.85	1.13	0.00	0.00
2 (Print Info) - complete	119	202.98	1.71	0.00	0.00
2 (Print Info) - no recording	25	30.45	1.22	0.00	0.00
2 (Print Info7) - complete	1	1.42	1.42	0.00	0.00
3 (Public) - complete	422	1167.62	2.77	0.00	0.00
3 (Public) - incomplete	1	2.05	2.05	0.00	0.00
3 (Public) - incomplete	325	574.52	1.77	0.00	0.00
3 (Public) - no recording	242	263.05	1.09	0.00	0.00
4 (Custodian) - complete	282	670.13	2.38	0.00	0.00
4 (Custodian) - incomplete	126	191.70	1.52	0.00	0.00
4 (Custodian) - no recording	79	82.37	1.04	0.00	0.00
5 (Reporter/News) - complete	31	74.53	2.40	0.00	0.00
5 (Reporter/News) - incomplete	23	43.78	1.90	0.00	0.00
5 (Reporter/News) - no recording	45	51.67	1.15	0.00	0.00
Main Menu Prompt - hangup	277	349.18	1.26	0.00	0.00
Off Hours Message	41	23.70	0.58	0.00	0.00
Rotary Call - complete	1	2.78	2.78	0.00	0.00
Rotary Call - complete	273	471.53	1.73	0.00	0.00
Rotary Call - no recording	238	127.92	0.54	0.00	0.00
Touch Tone Prompt - hangup	102	23.37	0.23	0.00	0.00
Totals	2667	4370.60	1.64	0.00	0.00

Fig: Call data report

5. CONCLUSION

We presented a proof of concept of using IVR based tools to citizen engagement around welfare schemes in Telangana. These tools can help authorities get insights about gaps in awareness of beneficiaries on details of the scheme, collect suggestions on modifications for the scheme, and understand implementation problems. The tools can also be used to verify the implementation and quality of the schemes by cross checking official data directly with the beneficiaries. While these concepts were developed and evaluated in the context of CSOs, they can be easily extended to collect feedback and verify details about other welfare schemes such as IVR system was implemented using a variant of IVR Junction and the public distribution system as well. We see a strong case to advocate the integration of such systems as part of the government schemes themselves, to enable the beneficiaries to directly access their own records and provide feedback.

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